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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/804,248	03/13/2001	Ashfaq Hossain	Hossain 2	7720
27964	7590	07/14/2004	EXAMINER	
HITT GAINES P.C. P.O. BOX 832570 RICHARDSON, TX 75083			ALI, SYED J	
			ART UNIT	PAPER NUMBER
			2127	
DATE MAILED: 07/14/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/804,248

Applicant(s)

HOSSAIN, ASHFAQ

Examiner

Syed J Ali

Art Unit

2127

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-25 are pending in this application.

Claim Objections

2. Claim 25 is objected to because of the following informalities:
 - a. In line 1 of claim 25, "comprises" should read "comprising".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-7, 9-10, 15-18, and 20-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Skanning et al. (USPN 6,721,720) (hereinafter Skanning).**

5. As per claim 1, Skanning teaches the invention as claimed, including a load-balancing unit adapted to apply fuzzy logic rules to sets of fuzzified network-related indicator values and to generate a selection index associated with each set of indicator values (col. 4 lines 7-53; col. 5 line 1 - col. 6 line 36; col. 9 lines 3-38).

6. As per claim 2, Skanning teaches the invention as claimed, including the unit as in claim 1 wherein the unit comprises a load balancing switch (col. 4 lines 7-53; col. 5 line 1 - col. 6 line 36; col. 9 lines 3-38).

7. As per claim 3, Skanning teaches the invention as claimed, including the unit as in claim 1 wherein the unit comprises a load balancing router (col. 4 lines 7-53; col. 5 line 1 - col. 6 line 36; col. 9 lines 3-38).

8. As per claim 4, Skanning teaches the invention as claimed, including the unit as in claim 1 wherein the unit comprises a programmed medium (col. 4 lines 7-53; col. 5 line 1 - col. 6 line 36; col. 9 lines 3-38).

9. As per claim 5, Skanning teaches the invention as claimed, including the unit as in claim 1 further adapted to direct a request to a server associated with one of the generated selection indices (col. 4 lines 7-53; col. 5 line 1 - col. 6 line 36; col. 9 lines 3-38).

10. As per claim 6, Skanning teaches the invention as claimed, including the unit as in claim 5 further adapted to direct a request to a server associated with a highest selection index (col. 4 lines 7-53; col. 5 line 1 - col. 6 line 36; col. 9 lines 3-38).

11. As per claim 7, Skanning teaches the invention as claimed, including the unit as in claim 1 wherein each set of network-related indicator values is associated with a server (col. 4 lines 7-53; col. 5 line 1 - col. 6 line 36; col. 9 lines 3-38).

12. As per claim 9, Skanning teaches the invention as claimed, including the unit as in claim 1 wherein the network-related indicator values comprise dynamic, time-dependent indicator values (col. 4 lines 7-53; col. 5 line 1 - col. 6 line 36; col. 9 lines 3-38).

13. As per claim 10, Skanning teaches the invention as claimed, including the unit as in claim 1 wherein the indicator values comprise values associated with a response time, a number of active connections and a delivered throughput (col. 4 lines 7-53; col. 5 line 1 - col. 6 line 36; col. 9 lines 3-38).

14. As per claims 15, 16-18, and 20-21, Skanning teaches the invention as claimed, including a method for selecting Internet servers able to be implemented on the load-balancing unit of claims 1, 5-7, and 9-10, respectively (Claims 1-9).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skanning.

17. As per claim 8, Skanning does not specifically teach the invention as claimed, including the unit as in claim 1 wherein the fuzzy logic rules comprise 27 rules. "Official Notice" is taken that Skanning implements a Bayesian Belief Network that applies a set of rules to make load balancing determinations, and that the discrepancy concerning the number of rules is permissible in light of Applicant's specification. Specifically, Skanning teaches the load balancer making a determination as to what server to direct a request to based on probabilistic analysis and parameters provided by a user, wherein the number of defined rules may be greater or less than 27. However, Applicant states on page 10, paragraph 0035 of the specification, "A smaller or greater number of rules may be used and still fall within the scope of the present invention".

18. As per claim 19, Skanning teaches the invention as claimed, including a method for selecting Internet servers able to be implemented on the load-balancing unit of claim 8 (Claims 1-9).

19. Claims 11-14 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skanning in view of Shibata et al. (USPN 5,939,925) (hereinafter Shibata).

20. As per claim 11, Shibata teaches the invention as claimed, including the unit as in claim 1 further adapted to generate an area associated with each fuzzy logic rule (Abstract, col. 11 lines 35-45).

21. It would have been obvious to one of ordinary skill in the art to combine Skanning and Shibata since the method of Skanning fails to explicitly detail how the selection index is arrived at. Rather, the load balancing mechanism simply distributes the request to the server that is "best" suited to service that request based on the processing load at the moment. The "centroid" or "center of gravity" method is well established within the realm of fuzzy logic. Shibata provides a way of generating control variables, such as the claimed selection index, based on center of gravity calculations generated from fuzzy logic calculations. The "center of gravity" method would be beneficial in combination with Skanning especially since in the case where multiple servers may be suitable to service a request, the best server can be found based on an aggregate of parameters.

22. As per claim 12, Shibata teaches the invention as claimed, including the unit as in claim 11 further adapted to generate an aggregate area from a combination of areas associated with the fuzzy logic rules (Abstract, col. 11 lines 35-45).

23. As per claim 13, Shibata teaches the invention as claimed, including the unit as in claim 12 further adapted to generate the selection index from the aggregate area (Abstract, col. 11 lines 35-45).

24. As per claim 14, Shibata teaches the invention as claimed, including the unit as in claim 12 further adapted to generate the selection index from a center of gravity of the aggregate area (Abstract, col. 11 lines 35-45).

25. As per claims 22-25, Skanning teaches the invention as claimed, including a method for selecting Internet servers able to be implemented on the load-balancing unit of claims 11-14, respectively (Claims 1-9).

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hershey et al. (USPN 5,375,070) teaches a dynamic load balancing method using a time-dependent information gathering system that generates control information to distribute a load evenly.

Waclawsky et al. (USPN 5,974,457) teaches a load balancer that monitors a network in real time to generate a control vector that indicates where traffic should be routed.

Barillaud (USPN 6,578,021) teaches a method of dynamically monitoring a network and balancing a computational load evenly across a virtual network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Syed J Ali whose telephone number is (703) 305-8106. The examiner can normally be reached on Mon-Fri 8-5:30, 2nd Friday off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai T An can be reached on (703) 305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Syed Ali
June 28, 2004

